

## Abstract of the Disclosure

The present invention is a signal processing method for use in a CDMA adaptive array antenna system, the method for forming the beam pattern by maximizing a transceiving gain in a direction toward a target mobile station and optimizing the beam pattern in a moving direction depended on a moving direction of each target mobile station during signal transceiving between a base station and the mobile station, the method forming an ideal beam pattern by a simplified computation procedure, and a computer readable recording medium for storing a program for implementing the method. The method comprises determining signature of gradient of output power of the array antenna to the phase of each antenna, updating the phase of each antenna by increasing or decreasing the phase by an adaptive gain depending on the signature of the corresponding gradient, determining weight corresponding to the updated phase, and applying the weight to a signal arrived at each antenna. The present invention increases significantly communication capability per cell and improve communication quality for a given bandwidth.